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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,047	10/21/2003	Joel L. Martin	51757-0042 (51757-288156)	3791
35395	7590	03/27/2006	EXAMINER	
WOMBLE CARLYLE SANDRIDGE & RICE, PPLC CHEVRON PHILLIPS CHEMICAL COMPANY LP P.O. BOX 7037 ATLANTA, GA 30357-0037			CHOI, LING SIU	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/690,047

Applicant(s)

MARTIN ET AL.

Examiner

Ling-Siu Choi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-35 is/are allowed.
- 6) ☒ Claim(s) 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

1. This Office Action is in response to the Amendment filed January 9, 2006. Claims 1-19 were canceled and claims 20-36 are now pending. In view of the Amendment, rejections of claims 20-35 are withdrawn and rejection of claim 36 under 35 U.S.C. 103(a) is maintained.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ballard et al. (US 4,056,669), Ballard et al. (US 3,969,386), Setterquist (US 3,950,269), Candlin et al. (US 3,738,944), or Kruse (US 3,773,742), either one in view of Wu (US 5,272,124).

The rejection is adequately set forth in paragraph 10 of the previous Office Action and is incorporated herein by reference.

#### ***Allowable Subject Matter***

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4. Claims 20-35 are allowable over the closest references: Ballard et al. (US 4,056,669), Ballard et al. (US 3,969,386), Setterquist (US 3,950,269), Candlin et al. (US 3,738,944), and Kruse (US 3,773,742).

A polymerization catalyst composition comprising
$MR_4$ [claim 21: $M(CH_2XR_3)_4$ - X = C, Si, Ge, Sn, or Pb] M = titanium, zirconium, or hafnium R = <u><math>\beta</math>-stable ligand</u>
Wherein $MR_4$ is supported on an aluminum-containing support selected from the group consisting of <b>fluorided alumina, fluorided silica-alumina, fluorided/silated alumina, aluminophosphate</b> , and mixtures thereof

(summary of claim 20)

Ballard et al.'669 disclose a catalyst for ethylene polymerization, comprising (a) a transition metal complex of general formula of  $MR_m$ , wherein M is a metal of Group IVa; R is a group of the general formula of  $-CH_2Z(R^1)_3$  with Z being silicon, germanium, tin, or lead and  $R^1$  being hydrocarbon or hydrogen and (b) particulate **alumina**, wherein the transition metal complex can be zirconium tetrabenzyl (claims 1 and 5). However, Ballard et al.'669 do not teach or fairly suggest a catalyst composition having the metal complex comprising  $\beta$ -stable ligand and the specific support.

Ballard et al.'386 disclose an organometallic compound for olefin polymerization, the organometallic compound having the general formula of  $M(CH_2SiR^1R^2R^3)_m$  with M being titanium and being supported on silica, alumina, or mixtures thereof (col. 4, lines 13-21 and 54-59; claims 1 and 4). However, Ballard et al.'386 do not teach or fairly

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suggest a catalyst composition having the metal complex comprising  $\beta$ -stable ligand and the specific support.

Setterquist discloses a catalyst for olefin polymerization, comprising (a) a tetra(hydrocarbyl) transition metal compound in the general formula of  $(RCH_2)_4M$  with R being aryl or tertiary alkyl and M being Ti, Zr, or Hf and (b) alumina, wherein the tetra(hydrocarbyl) transition metal compound can be tetra(neophy)zirconium or tetra(benzyl) zirconium; the alumina has a surface area of 10 to 500 m<sup>2</sup>/g (col. 5, lines 66-68; col. 6, lines 1-8; claims 1 and 8-10). However, Setterquist does not teach or fairly suggest a catalyst composition having the metal complex comprising  $\beta$ -stable ligand and the specific support.

Candlin et al. disclose a catalyst for olefin polymerization, comprising (a)  $M[CH_2Z(R)_3]_4$  with Z being silicon, germanium, tin, or lead and (b) silica, wherein  $M[CH_2Z(R)_3]_4$  can be zirconium or titanium tetra(benzyl) col. 2, lines 47-72; col. 3, lines 1-6; Examples 1 and 7). Kruse discloses a catalyst comprising (a) tetraneopentyl titanium and (b) silica or alumina (abstract; col. 2, lines 12-13 and 51-56). However, Candlin et al. do not teach or fairly suggest a catalyst composition having the metal complex comprising  $\beta$ -stable ligand and the specific support.

### **Conclusion**

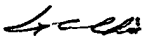
**5. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.



LING-SUI CHOI  
PRIMARY EXAMINER

March 15, 2006